



CBC

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent No. 6,835,282 <sup>B2</sup> ) Serial No. 10/037,547  
Inventor(s): Richard D. HARVEY *et al* ) Filed: January 4, 2002  
Issue Date: December 28, 2004 ) Attorney Docket No. 006401.00374

For: PAPER WEB WITH PRE-FLOCCULATED FILLER INCORPORATED THEREIN

**REQUEST FOR CERTIFICATE OF CORRECTION**

U.S. Patent and Trademark Office  
Customer Service Window  
Randolph Building, Mail Stop: Certificate of Correction Branch  
401 Dulany Street  
Alexandria, VA 22314

Sir:

Pursuant to 35 U.S.C. § 254 and 37 C.F.R. § 1.322, this is a request for the issuance of a Certificate of Correction in the above-identified patent. Two (2) copies of PTO Form 1050 are appended. The complete Certificate of Correction involves one page.

The mistakes identified in the appended Form occurred through no fault of the Applicants, as clearly disclosed by the records of the application, which matured into this patent. Enclosed for your convenience are the relevant portions of the Specification and Preliminary Amendment filed January 4, 2002, and the Amendment filed August 13, 2003.

Issuance of the Certificate of Correction containing the corrections is respectfully requested. Since these changes are necessitated through no fault of the Applicants, no fee is believed to be associated with this request. Nonetheless, should the Patent and Trademark Office determine that a fee is required, please charge our Deposit Account No. 19-0733.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated: 12-20-05

By: [Signature]  
Allen E. Hoover  
Registration No. 37,354

1001 G Street, N.W. (11th Fl.)  
Washington, D.C. 20001  
(202) 824-3000

Certificate  
DEC 27 2005  
of Correction

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO.: 6,835,282 *B2*  
DATED: December 28, 2004  
INVENTOR(S): Richard D. HARVEY *et al*

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Specification, Column 7, Line 48:  
Please replace "flocculent" with --flocculant--

In the Specification, Column 9, Line 50:  
Please replace "flocculent" with --flocculant--

In the Specification, Column 10, Line 17:  
Please replace "flocculent" with --flocculant--

In the Specification, Column 11, Line 12:  
Please replace "finish" with --furnish--

In the Specification, Column 11, Line 53:  
Please replace "flocculent" with --flocculant--

In the Specification, Column 14, Line 7:  
Please replace "flocculent" with --flocculant--

In Column 17, Claim 8, Line 52:  
Please replace "A paper" with --The paper--

In Column 18, Claim 17, Line 51:  
Please replace "containing" with --consisting--

In Column 19, Claim 19, Line 17:  
Please replace "steps" with --step--

In Column 20, Claim 24, Line 1:  
Please replace "A paper" with --The paper--

Mailing Address of Sender:

Banner & Witcoff, Ltd.  
11th Floor  
1001 G Street, N.W.  
Washington, DC 20001-4597

U.S. PAT. NO 6,835,282

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UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

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Please replace "A paper" with --The paper--

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In Column 19, Claim 19, Line 17:  
Please replace "steps" with --step--

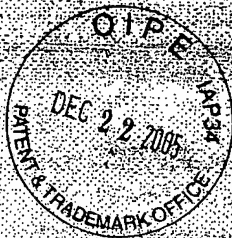
In Column 20, Claim 24, Line 1:  
Please replace "A paper" with --The paper--

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In re Application of Harvey et al., Filed January 4, 2002  
For: A PAPER WEB WITH PRE-FLOCCULATED FILLER INCORPORATED  
THEREIN  
U.S. Patent Application No. Unassigned

Enclosed: Utility Patent Application Transmittal (2 pages in duplicate); Application Data Sheet (2 pages); Specification (27 pages); Claims (11 pages); Abstract (1 page); Drawings (1 sheet with Figures 1 & 2); Copy of Combined Declaration and Power of Attorney (3 pages); Preliminary Amendment (8 pages); Amendments to the Claims (8 pages); Pending Claims As Amended (7 pages); Information Disclosure Statement (4 pages in duplicate); Form PTO-1449 (1 page); Copy of European Search Report (3 pages); Copies of References AA-AQ; a check in the amount of \$1,592.00 for the Application Fee; and this return postcard.

Enclosed: Utility Patent Application Transmittal (2 pages in duplicate); Application Data Sheet (2 pages); Specification (27 pages); Claims (11 pages); Abstract (1 page); Drawings (1 sheet with Figures 1 & 2); Copy of Combined Declaration and Power of Attorney (3 pages); Preliminary Amendment (8 pages); Amendments to the Claims (8 pages); Pending Claims As Amended (7 pages); Information Disclosure Statement (4 pages in duplicate); Form PTO-1449 (1 page); Copy of European Search Report (3 pages); Copies of References AA-AQ; a check in the amount of \$1,592.00 for the Application Fee; and this return postcard.

U.S. Patent Application No. Unassigned  
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For: A PAPER WEB WITH PRE-FLOCCULATED FILLER INCORPORATED  
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Mailed January 4, 2002 via Express Mail EL841017121US  
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filler content of the web preferably is at least about 5% by weight, more preferably about 7.5% by weight. Preferably as the selection of relative flow rates of the paper furnish and of the pre-flocculated filler to achieve the desired filler retention is within the level of skill in the art. Typically, the pre-flocculated filler is added to the  
5 furnish in an amount ranging from about 80 lb/ton to about 200 lb/ton of dry furnish, preferably about 80 lb/ton to about 100 lb/ton in some applications.

Surprisingly, when a pre-flocculated filler is added to a newsprint paper furnish in accordance with the present invention, the retention of substantial amounts of impurities in the web is avoided. Enhancements in strength, brightness, opacity,  
10 and other properties of the newsprint sheets prepared from the paper web relative to paper that has not been prepared using a pre-flocculated filler may be realized.

The present invention is also directed to a method of treating a coated broke, and for preparing a paper web from such treated coated broke. In accordance with this aspect of the invention, a repulped slurry of coated broke is  
15 first provided. The coated broke material, which typically contains pigments and adhesives, and which may contain other materials, can be provided by repulping the coated broke using agitation and water.

In accordance with the invention, a chemical flocculant is added to the slurry, and a shearing force is applied to the slurry. The chemical flocculant  
20 should be added in an amount effective to form floccs, the floccs including fiber and particles of coating residue. Preferably, the chemical flocculant is added in an amount ranging from about 0.05% to about 60%, and more preferably from about 5% to about 15%, by weight of the coated broke material. The shearing force should be applied in an amount effective to limit the size of the floccs to a size that  
25 is effective to enhance the retention of floccs when a paper web is withdrawn from the slurry. It is believed that the shearing force will control the size of the floccs, or will prevent the floccs from reaching an "overflocculated" state in which the size of the floccs limits the the formation, strength, and optical properties for the corresponding paper web.

30 Any suitable broke stock can be used in conjunction with the present invention. For example, coated broke stock that contains components such as

When a pre-flocculated coated broke pulp is added to a furnish in accordance with the present invention, the retention of both fiber pigment, binders, and other coating additives increases. Such improved retention is believed to reduce the formation of white pitch deposits in the papermaking machine, thereby  
5 providing improved machine efficiency via reduced breaks and downtime, and increasing productivity. In addition, the properties of the paper web prepared using the treated coated broke slurry of the invention surprisingly are comparable to or improved over paper prepared using coated broke slurries that have not been treated in accordance with the invention. Paper properties improved by  
10 pretreatment of the coated broke include formation, strength, porosity, optical properties, and reduced defects, such as holes, fish eyes, and the like.

## EXAMPLES

15 The following examples illustrate the present invention, but should not be construed as limiting the invention in scope.

### EXAMPLE 1

#### Evaluation of Retention Characteristics

20 This Example provides a comparative evaluation of the retention of filler and of undesired components as would be observed in the preparation of a paper web, as between the process of the invention and a conventional process.

#### Preparation of Pre-Flocculated Filler

25 Following the teachings of U.S. Patent 4,799,964, an aqueous slurry of clay at a dry solids content of 20% was pumped into a centrifugal mixing device at a rate of 3300 ml/min. Simultaneously, a 1% cationic polacrylamide-based flocculating agent was pumped into the mixture at a rate of 150 ml/min, thus resulting in a dry  
floculant to dry filler add-on level of 0.2%.

30 Flocculated clay particles were produced continuously in the mixing device. The flocculated slurry was collected at the discharge of the mixing device. Using a Malvern Instruments Mastersizer particle size analyzer, the pre-flocculated filler was

found to have a medium particle size of 13.87  $\mu$ , as compared to a medium particle size of 5.25  $\mu$  in the initial clay slurry.

### Evaluation of Retention Characteristics

5        Using a Dynamic Drainage Jar, available from Paper Research Materials, Inc. 770 James Street, Apartment 1206, Syracuse, New York, or from Paper Chemistry Laboratories, Inc., Stonleigh Avenue, Carmel, New York, the retention properties of the pre-flocculated filler were evaluated. The Drainage Jar was equipped with a 200-mesh screen. To the Drainage Jar was added a furnish prepared from a blend of  
10    thick stock and whitewater obtained from Jefferson Smurfit Company, Newberg, Oregon. The thick stock was a combination of approximately 50% mechanically pulped fiber, and 50% recycled fiber. The whitewater had been obtained from a paper machine making newsprint, and thus the whitewater included unretained components of the paper-making furnish. The stock pH was adjusted to 5.5 with  
15    sulfuric acid, and the ash level of the stock was found to be 9.6%.

      A 500 ml charge of this combined furnish at approximately 0.50% consistency was added to the Drainage Jar under agitation of 750 RPM to provide a furnish in the Jar. The pre-flocculated clay was added at 5%, or 100 lb/ton, on fiber from a 20% slurry. The 20% clay slurry was produced by diluting a 70% aqueous  
20    slurry with tap water. The clay was KAOFILL Kaolin, obtained from Thiele Kaolin Company, Sandersville, GA. No additional flocculant was added. The furnish was allowed to mix for 10 seconds prior to drainage. A 30 ml aliquot was collected and then discarded to ensure the collection of an untainted sample for testing. Then, a 100 ml sample was collected, filtered, ashed, and analyzed for total retention and for  
25    filler retention.

      For comparative purposes, a 500 ml charge of the dilute stock was added to the Drainage Jar at 750 RPM. Unflocculated clay was added at 5% on fiber from a 20% slurry. After allowing 10 seconds for mixing, the flocculating agent that had been used to form the pre-flocculated filler as set forth above was added as a  
30    retention aid. This retention aid was added at a level of 0.3 lb./ton (0.015%). The furnish was allowed to mix for an additional 5 seconds prior to drainage. A 30 ml

### Preparation of a Pre-Flocculated Filler

In accordance with the procedure of Example 1, a clay slurry at 20% solids concentration was continuously mixed with a flocculant solution in the amount of 0.4% dry flocculant to dry filler add-on level. The resulting flocculated filler had a  
 5 median particle size of 78.56  $\mu$ .

### Evaluation of Retention Characteristics

Using a Dynamic Drainage Jar and the paper stock used in Example 1, pre-flocculated filler was added to the stock in an amount of 0.4 lb. flocculating agent  
 10 per ton furnish (0.020%). No additional flocculating agent was added.

For comparative purposes, unflocculated clay was added to a Dynamic Drainage Jar. The flocculating agent that had been used in the preparation of pre-flocculated filler was added as a retention aid. The retention aid was added at a level of 0.4 lb. flocculating agent per ton furnish (0.02%). As a control, unflocculated  
 15 filler was added to the Jar without using a retention aid.

Total retention, filler retention, and non-filler retention were evaluated, and the following results were obtained:

TABLE 2

	Total Retention	Filler Retention	Non Filler Retention
Control	21.6%	1.8%	27.5%
Conventional	25.4%	10.3%	30.0%
Pre-Flocculated Filler	24.1%	13.0%	27.4%

20

These results illustrate that the flocculated filler provides a significant increase in filler retention as compared to the conventional process. Surprisingly, non-filler retention did not significantly change as between the flocculated filler and the control, and non-filler retention was less for the process of the invention as



compared with that of the conventional process. Again, this indicates an ability to selectively control retention.

### EXAMPLE 3

#### 5                   **Preparation of Handsheets and Brightness Evaluation**

This Example illustrates the preparation of handsheets and the evaluation of the brightness (GE Scale) of the handsheets.

In accordance with the procedures set forth in Example 1, pre-flocculated clay filler was prepared. The flocculated clay filler was added to a 500 ml charge of furnish in a Dynamic Drainage Jar at 750 RPM agitation. Filler was added at 5% on  
10 furnish in a Dynamic Drainage Jar at 750 RPM agitation. Filler was added at 5% on fiber containing the equivalent of 0.2 lb. flocculant per ton furnish (0.010%). After applying the furnish to the filler within the Dynamic Drainage Jar, the charge of stock was immediately transferred to a handsheet apparatus, and a handsheet was formed. The sheet was pressed twice at 5 minutes and at 2 minutes, dried on drum  
15 dryer at 100° F (38° C) for approximately 20 minutes, and allowed to cure overnight in a constant temperature/humidity room. A second handsheet was prepared using 10% flocculated clay filler. For comparative purposes, similar handsheets were formed using comparable amounts of filler and adding the flocculating agent as a retention aid after the filler was added to the furnish in the Dynamic Drainage Jar.  
20 Control handsheets were also prepared without the addition of filler or retention aid to the Jar.

Each set of handsheets was analyzed for GE brightness, and for filler content. From these results, brightness values for a given ash value for flocculated, unflocculated, and zero virgin filler addition were evaluated for comparison with the  
25 control handsheet. The following results were obtained:

**EXAMPLE 7**

This Example provides a comparison of the retention exhibited in various paper furnishes prepared using recycled coated broke.

5 A papermaking furnish was prepared using 25% bleached Kraft softwood and 75% bleached Kraft hardwood, refined to 300 Canadian Standard Freeness using a Valley beater. This furnish had a consistency of 0.50%, which is typical for headbox furnishes. The retention characteristics of this slurry in combination with coated broke were evaluated using a Dynamic Drainage Jar.

10 To evaluate the retention characteristics of a paper furnish prepared in accordance with the invention, a coated broke obtained from a commercial paper mill was repulped using a Valley beater and water to a target consistency of 0.50%. This slurry was found to contain a pigment content of approximately 24%. This slurry was pumped at a rate of 3200 ml/min., to a centrifugal mixing device. A 1% cationic polyacrylamide-based flocculant was simultaneously pumped  
15 through the mixer at a rate of 160 ml/min., thus giving a dry flocculant to broke add-on level of 10.0%.

A 500 ml charge of the headbox stock was added to the Drainage Jar using 750 RPM agitation. The treated broke slurry was added in an amount of 10% dry broke weight to dry fiber. After 40 seconds of mixing following addition of the  
20 treated broke, a retention aid was added in the amount of 0.5 lb/ton. The furnish was then allowed to mix for 10 seconds, a 30 ml aliquot was collected and discarded, to answer and untainted sample for analysis, and a 100 ml sample was collected and analyzed. Material retained on a 200 mesh screen represented retained material, with material passing through the screen (fines) representing  
25 unretained material. The retained material was dried and weighed, and the present retention calculated according to the following formula:

$$\begin{aligned} 100\%: & \quad \frac{\text{Fines dry weight} \times 500 \text{ ml} / \text{liquid sample weight}}{\text{Total fines weight} \times 500 \text{ ml} / 100 \text{ ml}} \end{aligned}$$

30 To provide a first comparison, a 500 mL charge of the headbox stock was added to the Drainage Jar, and untreated broke slurry was added at 10% dry broke

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Harvey et al.

Application No.: Unassigned

Art Unit: Unassigned

Examiner: Unassigned

Filed: January 4, 2002

For: A PAPER WEB WITH PRE-  
FLOCCULATED FILLER  
INCORPORATED THEREIN

PRELIMINARY AMENDMENT

Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Prior to the examination of the above-identified patent application, please enter the following amendments.

AMENDMENTS

IN THE TITLE:

Please amend the title to read as follows:

"A PAPER WEB WITH PRE-FLOCCULATED FILLER INCORPORATED  
THEREIN"

IN THE SPECIFICATION:

Please amend the first paragraph on page 1 under the heading "Cross-Reference to Related Patent Applications" to read as follows:

"This application is a division of copending U.S. Patent Application No. 09/597,473, filed June 20, 2000, which is a continuation-in-part of U.S. Patent Application No. 09/173,875, filed October 16, 1998. Both parent applications are incorporated herein by reference in their entireties."

IN THE CLAIMS:

Please cancel claims 1-13, 19-31, 35- 40, 42-47, 49-54 and 56-61.

Please amend claims 14-18, 32-34, 41, 48, 55 and 62 to read as follows:

14. (Amended) A paper web prepared by a process comprising the steps of:  
providing a pulp slurry, said slurry containing at least about 30% by dry pulp weight of a low-grade pulp, said low-grade pulp being a pulp selected from the group consisting of a groundwood pulp, a recycled pulp, and mixtures thereof;  
adding a pre-flocculated filler to said slurry;  
forming a paper web from said slurry; and  
winding said web on a reel;  
said pre-flocculated filler being added to said slurry in an amount effective to provide a filler content in said web, at least a portion of said filler in said web comprising said pre-flocculated filler.

15. (Amended) The paper web according to claim 14, the process further comprising the steps of:  
drying said web; and  
cutting said web into sheets.

16. (Amended) The paper web according to claim 15, the process further comprising the step of:  
printing on said web prior to cutting said web into sheets.

17. (Amended) A newspaper prepared by a process comprising the steps of:  
providing a newsprint pulp slurry;  
adding a pre-flocculated filler to said slurry;  
forming a paper web from said slurry, said pre-flocculated filler being added to said slurry in an amount effective to provide a filler content in said web, at least a portion of said filler in said web comprising said pre-flocculated filler;  
collecting said web on a reel, and in either order:  
printing on said web; and  
cutting said web into sheets.

18. (Amended) The newspaper according to claim 17, wherein said web is cut into sheets after said step of printing on said web.

32. (Amended) A paper web prepared by a process comprising the steps of:

providing a pulp slurry, said slurry containing at least about 30% dry pulp weight of a low-grade pulp, said low-grade pulp being a pulp selected from the group consisting of a groundwood pulp, a recycled pulp, and mixtures thereof;

adding a pre-flocculated filler to said slurry to thereby form a slurry/filler mixture;

introducing said slurry/filler mixture to the headbox of a paper-making machine;

depositing said slurry on a web-former; and

withdrawing a paper web from said headbox;

said pre-flocculated filler being added to said slurry in an amount effective to provide a filler content in said web, at least a portion of said filler in said web comprising said pre-flocculated filler.

33. (Amended) The paper web according to claim 32, the process further comprising the steps of:

drying said web; and

cutting said web into sheets.

34. (Amended) The paper web according to claim 33, the process further comprising the step of:

printing on said web prior to cutting said web into sheets.

41. (Amended) A paper web prepared by a process comprising the steps of:  
providing a treated slurry of coated broke, said treated slurry having been prepared by a process comprising the steps of:

providing a repulped slurry of coated broke, said slurry containing fibers and particles of coating residue;

adding a chemical flocculant to said slurry in an amount effective to form flocs of said fibers and particles of coating residue; and

applying a shearing force to said slurry, said shearing force being sufficient to limit the size of said flocs to a size that is effective to enhance the retention of said flocs in a paper web; and

withdrawing a paper web from said treated slurry.

48. (Amended) A paper web prepared by a process comprising the steps of:  
providing a treated slurry of coated broke, said treated slurry having been prepared by a process comprising the steps of:

Please add the following claims:

63. (New) The paper web according to claim 14, wherein said low-grade pulp is present in said slurry in an amount of at least about 40%.
64. (New) The paper web according to claim 14, wherein said low-grade pulp is present in said slurry in an amount of at least about 50%.
65. (New) The paper web according to claim 14, wherein said pre-flocculated filler is selected from the group consisting of clays, lithopone, sulfate fillers, titanium pigments, talc, calcium carbonate, and gypsum.
66. (New) The paper web according to claim 65, wherein said pre-flocculated filler is flocculated with a flocculating agent selected from the group consisting of cationic starch derivatives and anionic starch derivatives.
67. (New) The paper web according to claim 66, wherein said pre-flocculated filler is flocculated with a cationic starch paste.
68. (New) The paper web according to claim 65, wherein said pre-flocculated filler is prepared by a process comprising the steps of:  
continuously introducing an aqueous slurry of a non-flocculated paper filler material and an aqueous slurry of from 0.5 to 60% by weight of the filler material of a flocculating agent into a shear imparting device and imparting to the mixture within said device a shearing force sufficient to provide flocculated filler particles of a size adapted for use in paper making without any additional treatment and continuously removing said flocculated filler particles from the shear imparting device.
69. (New) The paper web according to claim 14, wherein said pulp includes groundwood pulp.
70. (New) The paper web according to claim 14, wherein said pre-flocculated filler is added to said slurry in an amount effective to provide a total filler content in said web of at least about 5% by weight.

71. (New) The paper web according to claim 14, wherein said pre-flocculated filler is added to said slurry in an amount effective to provide a total filler content in said web of at least about 7.5% by weight.

72. (New) The paper web according to claim 14, wherein all of the filler incorporated into said web is present as a result of said addition of said pre-flocculated filler to said slurry.

73. (New) The paper web according to claim 14, wherein the amount of flocculating agent in said filler ranges from about 0.5% to about 4% dry flocculant by dry weight of said filler.

74. (New) The paper web according to claim 32, wherein said low-grade pulp is present in said slurry in an amount of at least about 40%.

75. (New) The paper web according to claim 32, wherein said low-grade pulp is present in said slurry in an amount of at least about 50%.

76. (New) The paper web according to claim 32, wherein said pre-flocculated filler is selected from the group consisting of clays, lithopone, sulfate fillers, titanium pigments, talc, calcium carbonate, and gypsum.

77. (New) The paper web according to claim 76, wherein said pre-flocculated filler is flocculated with a flocculating agent selected from the group consisting of cationic starch derivatives and anionic starch derivatives.

78. (New) The paper web according to claim 77, wherein said pre-flocculated filler is flocculated with a cationic starch paste.

79. (New) The paper web according to claim 76, wherein said pre-flocculated filler is prepared by a process comprising the steps of:

continuously introducing an aqueous slurry of a non-flocculated paper filler material and an aqueous slurry of from 0.5 to 60% by weight of the filler material of a flocculating agent into a shear imparting device and imparting to the mixture within said device a shearing force sufficient to provide flocculated filler particles of a size adapted for use in paper making without

TTI LVM 312 616 5700

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FILE MODE OPTION

ADDRESS

RESULT

PAGE

3513 MEMORY TX

G3-AT:8214385917038729310

OK

15/1!

REASON FOR ERROR  
E-1) HANG UP OR LINE FAIL  
E-3) NO ANSWER

E-2) BUSY  
E-4) NO FACSIMILE CONNECTION

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**FACSIMILE COVER SHEET**

DATE: AUGUST 13, 2003

NUMBER OF PAGES (INCLUDING  
THIS TRANSMITTAL COVER SHEET): **15**

YOUR REFERENCE: U.S. APPLICATION NO. 10/037,547

OUR REFERENCE: 214385

TO: **EXAMINER D. A. WALLS**  
PATENT EXAMINER  
ART UNIT 1731  
UNITED STATES PATENT & TRADEMARK OFFICE

TELEPHONE NUMBER: 703-305-0933  
FACSIMILE NUMBER: 703-872-9310

FROM: ALLEN E. HOOVER

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Harvey et al.

Application No. 10/037,547

Art Unit: 1731

Examiner: D. A. Walls

Filed: January 4, 2002

For: A PAPER WEB WITH PRE-  
FLOCCUTATED FILLER  
INCORPORATED THEREIN

**AMENDMENT AND RESPONSE TO OFFICE ACTION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action dated February 13, 2003, please enter the following amendments and consider the following remarks.

<b>CERTIFICATE OF MAILING OR TRANSMISSION UNDER 37 CFR 1.8</b>		
I hereby certify that this Response to Office Action and all accompanying documents are, on the date indicated below, <input type="checkbox"/> being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop , Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or <input checked="" type="checkbox"/> being facsimile transmitted to the U.S. Patent and Trademark Office, Attention: Examiner Walls, Art Unit 1731, Facsimile Number (703) 872-9310.		
Name (Print/Type)	Rick D. Madsen	
Signature	<i>Rick D. Madsen</i>	Date August 13, 2003

17. (Currently Amended) A newspaper prepared by a process comprising the steps of:

providing a newsprint pulp slurry;

adding a pre-flocculated filler to said slurry;

wherein said pre-flocculated filler is selected from the group consisting of clays, lithopone, sulfate fillers, titanium pigments, talc, calcium carbonate, and gypsum, wherein said pre-flocculated filler has been prepared by steps of:

continuously introducing an aqueous slurry of a non-flocculated paper filler material and an aqueous slurry of from 0.5 to 60% by weight of the filler material of a flocculating agent into a shear imparting device and imparting to the mixture within said device a shearing force sufficient to provided flocculated filler particles of a size adapted for use in paper making without any additional treatment and continuously removing said flocculated filler particles from the shear imparting device, said particle size being in the range from 38 to 75 micron,

forming a paper web from said slurry, said pre-flocculated filler being added to said slurry in an amount effective to provide a filler content in said web, at least a portion of said filler in said web comprising said pre-flocculated filler;

collecting said web on a reel, and in either order:

printing on said web; and

cutting said web into sheets.

18. (Previously Amended) The newspaper according to claim 17, wherein said web is cut into sheets after said step of printing on said web.

19-31. Cancelled.

32. (Currently Amended) A paper web prepared by a process comprising the steps of:

providing a pulp slurry, said slurry containing at least about 30% dry pulp weight of a low-grade pulp, said low-grade pulp being a pulp selected from the group consisting of a groundwood pulp, a recycled pulp, and mixtures thereof;

adding a pre-flocculated filler to said slurry to thereby form a slurry/filler mixture;

introducing said slurry/filler mixture to the headbox of a paper-making machine;

depositing said slurry on a web-former; and

withdrawing a paper web from said headbox;